CLAIMS

What Is Claimed Is:

1. A method for reducing interpath interference between a first path and at least one other path in a channel delay estimator in a radio receiver comprising the steps of:

generating an estimate of an impulse response of the first path;

generating an estimate of an impulse response of the at least one other path;

calculating the absolute value of the estimate of the first path;

calculating the absolute value of the estimate of the at least one other path; and

subtracting a pulse shape corresponding to the absolute value of the at least one other path from the absolute value of the estimate of the first path, wherein an amplitude of the pulse shape is scaled in relation to an estimate of the phase difference between the first path and the at least one other path.

2. The method of claim 1, wherein the radio receiver is a CDMA receiver.

3. A method for reducing interpath interference between a first path signal and at least one other path signal in a channel delay estimator in a radio receiver comprising the steps of:

obtaining a relative phase of the first path signal and the at least one other path signal;

determining, based on the relative phase, an interference component on the first path signal caused by the at least one other path signal; and

removing the interference component from the first path signal.

4. The method of claim 3, wherein the step of obtaining the relative phase of the first path signal and the at least one other path signal is accomplished using phase information that is available in a combiner.

5. A channel delay estimator in a receiver comprising:

a plurality of correlators, wherein a signal applied to an input port of each of the plurality of correlators produces a tuned output signal at a corresponding output port of the respective correlator;

means for determining an absolute value of the tuned output signal signal, wherein the output port of each correlator is coupled to a corresponding input of the absolute value determining means;

means for determining interference; and

an adder, wherein an output of the interference determining means and an output of the absolute value determining means are each coupled to a respective input of the adder.

6. The channel delay estimator of claim 5, wherein the interference determining means comprises:

means for obtaining a phase difference between a first signal and at least one other signal; and

means for calculating an interference component on the first path signal caused by the at least one other path signal.

7. The channel delay estimator of claim 6, wherein the calculating means comprises logic capable of evaluating the equation

$$\varepsilon_{12}(i) = a_2 \cdot p(d_1 - d_2) \cdot \cos(\phi_1 - \phi_2) \cdot e^{i\phi_1}.$$

8. The channel delay estimator of claim 6, wherein the means for obtaining the phase difference between the first signal and at least one other signal uses phase information available to a combiner in the receiver.

9. A mobile radio terminal having a channel delay estimator in a receiver, the channel delay estimator comprising:

a plurality of correlators, wherein a signal applied to an input port of each of the plurality of correlators produces a tuned output signal at a corresponding output port of the respective correlator;

means for determining an absolute value of the tuned output signal signal, wherein the output port of each correlator is coupled to a corresponding input of the absolute value determining means;

means for determining interference; and

an adder, wherein an output of the interference determining means and an output of the absolute value determining means are each coupled to a respective input of the adder.

10. The mobile radio terminal of claim 9, wherein the interference determining means comprises:

means for obtaining a phase difference between a first signal and at least one other signal; and

means for calculating an interference component on the first path signal caused by the at least one other path signal.

11. The mobile radio terminal of claim 10, wherein the calculating means comprises a microprocessor capable of evaluating the equation

$$\varepsilon_{12}(i) = a_2 \cdot p(d_1 - d_2) \cdot \cos(\phi_1 - \phi_2) \cdot e^{i\phi_1}.$$

12. The mobile radio terminal of claim 10, wherein the means for obtaining the phase difference between the first signal and at least one other signal uses phase information available to a combiner in the receiver.